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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/584,585	05/31/2000	Howard Roy Stuart	148-026 (Stuart 3)	4650

7590 10/06/2003

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EXAMINER
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VY, HUNG T

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/584,585

Applicant(s)

STUART, HOWARD ROY

Examiner

Hung T Vy

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE \_\_\_\_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 and 15-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

  
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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_ 6) ☐ Other: \_\_\_\_

## DETAILED ACTION

1. In response to the amendment filed on dated 03/17/2003, claims 1-13 and 15-30 are pending in this application as a result of the addition of claim 30 and the cancellation of claims 14.

### Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraph of 35 U.S.C. § 102 in view of the AIPA and H.R. 2215 that forms the basis for the rejections under this section made in the attached Office action:

**A person shall be entitled to a patent unless -**

**(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.**

35 U.S.C. § 102(e), as revised by the AIPA and H.R. 2215, applies to all qualifying references, except when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. For such patents, the prior art date is determined under 35 U.S.C. § 102(e) as it existed prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. § 102(e)).

Claims 1, 6, 9-13, and 15-30 are rejected under 35 U. S. C. § 102 (e) as being anticipated by Scherer et al., Patent No. 6,534,798.

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Regarding claim 1 and 10, Scherer et al. disclose an optical structure for processing optical energy comprising a metal layer (18) having a first surface comprising a plurality of voids (See Fig 1f, g and h) and the void have a dimension less than the wavelength of optical energy being processed (See Scherer et al. discloses the wavelength 986nm or 930 nm (See column 10, line 13-15) and the dimension of hole is 420nm (See column 14, line 4-6)) and a first material taken from the group consisting of an active or non-linear material substantially wherein the plurality of voids in the metal layer exhibit localized plasma resonance that enhance emission and absorption of optical energy through the active or non-linear material (See column 5, line 60-67 and column 6, line 1-37 or abstract); and substrate (14) for supporting the metal layer (See fig 1, 2, 3).

Regarding claims 6 and 9, Scherer et al. discloses the structure wherein said voids are arranged in an ordered array (See fig 1, 2) and metal layer is greater than 50 nm thick (See column 3, line 1-4).

Regarding claims 11-13 and 15-16, Scherer et al. discloses the structure where first material comprises one or more layer comprising materials taken from the group consisting of an active material and non-linear material placed adjacent the voids (semiconductor core) in side the voids, in the form of a layer on top of metal layer (22)(See fig. 1 and 3).

With respect to claims 18-27, the methods for optical processing are considered as product by process steps.

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Regarding claims 17, and 28-30, It is inherent that the structure which is in the form of a laser an LED, a wavelength converter, sensor or a switch.

### **Claim Rejections - 35 U.S.C. § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-5 and 7-8 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Scherer et al., U.S. patent No. 6,534,798.

Regarding to claims 5, Scherer et al. discloses the claimed invention except for diameter. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have the same range as this application, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. In re Aller, 105 USPQ 233.

Regarding claims 2-4 and 7-8, Scherer et al. discloses the claimed invention except for voids are cylindrical holes passing through said metal layer and voids are arranged in a triangle array. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged as this application, since it has

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been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse, 86 USPQ 70.

### **Response to Arguments**

4. Applicant's arguments filed on 08/06/2003 have been fully considered but they are not persuasive. The applicant's argument below:

- a. "With respect to the failure of Scherer et al. to disclose or suggest voids with a dimension less than the wavelength of the optical energy to be processed" page 7, four full paragraph.
- b. " the Scherer et al. reference fails to anticipate or render obvious the present claimed invention wherein it does not disclose or suggest a localized resonance" page 9, second full paragraph.
- c. "the claimed voids being cylindrical and in triangle array would have been obvious from the reference" page 8, sixth full paragraph.

In response to Applicant's argument a above, Applicant's arguments are not persuasive because Scherer et al. discloses the wavelength with 986 nm or 930nm and dimension of void is 420nm (see rejection U.S.C. 102(e) above). The applicant's argument about the optical energy for processing at the metal layer is form the semiconductor is not corrected.

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In response to Applicant's argument b above, Applicant's arguments are not persuasive because Scherer et al. discloses all limitation of invention as "localized resonance" (see column 9, line 55-57).

In response to Applicant's argument c above, Applicant's arguments are not persuasive because the applicant disclose in specification on page 10, applicant shows that by choosing the geometry of the pattern and spacing for the voids lasing wavelength and modal characteristics of a device can be controlled. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have arranged as this application as can be controlled.

### Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (703) 605-0757. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



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September 18, 2003